

## Product datasheet for **MR209093L4V**

### Mettl3 (NM\_019721) Mouse Tagged ORF Clone Lentiviral Particle

#### Product data:

Product Type:	Lentiviral Particles
Product Name:	Mettl3 (NM_019721) Mouse Tagged ORF Clone Lentiviral Particle
Symbol:	Mettl3
Synonyms:	2310024F18Rik; M6A; Spo8
Mammalian Cell Selection:	Puromycin
Vector:	pLenti-C-mGFP-P2A-Puro (PS100093)
Tag:	mGFP
ACCN:	NM_019721
ORF Size:	1743 bp
ORF Nucleotide Sequence:	The ORF insert of this clone is exactly the same as(MR209093).
OTI Disclaimer:	The molecular sequence of this clone aligns with the gene accession number as a point of reference only. However, individual transcript sequences of the same gene can differ through naturally occurring variations (e.g. polymorphisms), each with its own valid existence. This clone is substantially in agreement with the reference, but a complete review of all prevailing variants is recommended prior to use. <a href="#">More info</a>
OTI Annotation:	This clone was engineered to express the complete ORF with an expression tag. Expression varies depending on the nature of the gene.
RefSeq:	<a href="#">NM_019721.2</a> , <a href="#">NP_062695.2</a>
RefSeq Size:	2035 bp
RefSeq ORF:	1743 bp
Locus ID:	56335
UniProt ID:	<a href="#">Q8C3P7</a>
Cytogenetics:	14 C2



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**Gene Summary:**

The METTL3-METTL14 heterodimer forms a N6-methyltransferase complex that methylates adenosine residues at the N(6) position of some RNAs and regulates various processes such as the circadian clock, differentiation of embryonic and hematopoietic stem cells, cortical neurogenesis, response to DNA damage, differentiation of T-cells and primary miRNA processing (PubMed:25456834, PubMed:24394384, PubMed:25569111, PubMed:28809392, PubMed:28792938, PubMed:28869969, PubMed:28965759). In the heterodimer formed with METTL14, METTL3 constitutes the catalytic core (By similarity). N6-methyladenosine (m6A), which takes place at the 5'-[AG]GAC-3' consensus sites of some mRNAs, plays a role in mRNA stability, processing, translation efficiency and editing (By similarity). M6A acts as a key regulator of mRNA stability: methylation is completed upon the release of mRNA into the nucleoplasm and promotes mRNA destabilization and degradation (PubMed:28637692). In embryonic stem cells (ESCs), m6A methylation of mRNAs encoding key naive pluripotency-promoting transcripts results in transcript destabilization, promoting differentiation of ESCs (PubMed:25456834, PubMed:24394384, PubMed:25569111). M6A regulates the length of the circadian clock: acts as an early pace-setter in the circadian loop by putting mRNA production on a fast-track for facilitating nuclear processing, thereby providing an early point of control in setting the dynamics of the feedback loop (PubMed:24209618). M6A also regulates circadian regulation of hepatic lipid metabolism (By similarity). M6A regulates spermatogonial differentiation and meiosis and is essential for male fertility and spermatogenesis (PubMed:28809392, PubMed:28914256). Involved in the response to DNA damage: in response to ultraviolet irradiation, METTL3 rapidly catalyzes the formation of m6A on poly(A) transcripts at DNA damage sites, leading to the recruitment of POLK to DNA damage sites (By similarity). M6A is also required for T-cell homeostasis and differentiation: m6A methylation of transcripts of SOCS family members (SOCS1, SOCS3 and CISH) in naive T-cells promotes mRNA destabilization and degradation, promoting T-cell differentiation (PubMed:28792938). Inhibits the type I interferon response by mediating m6A methylation of IFNB (By similarity). M6A also regulates cortical neurogenesis: m6A methylation of transcripts related to transcription factors, neural stem cells, the cell cycle and neuronal differentiation during brain development promotes their destabilization and decay, promoting differentiation of radial glial cells (PubMed:28965759). M6A also takes place in other RNA molecules, such as primary miRNA (pri-miRNAs) (By similarity). Mediates m6A methylation of Xist RNA, thereby participating in random X inactivation: m6A methylation of Xist leads to target YTHDC1 reader on Xist and promote transcription repression activity of Xist (By similarity). METTL3 mediates methylation of pri-miRNAs, marking them for recognition and processing by DGCR8 (By similarity). Acts as a positive regulator of mRNA translation independently of the methyltransferase activity: promotes translation by interacting with the translation initiation machinery in the cytoplasm (By similarity).[UniProtKB/Swiss-Prot Function]